Chapter 1: Introduction and Background

Introduction

Twelve thousand years ago, glaciers created the shallow peat-filled marshland basin known as the "Little Everglades of the North," or Horicon Marsh. In the beginning, the Horicon Marsh supported a vast array of wildlife and generations of native peoples. When early European settlers came to this land the Marsh began to undergo dynamic changes lasting to the present day. The waters and wet soils of the Marsh were alternately dammed, ditched, drained, and farmed. Competing human demands led to the Marsh being one of the most contested pieces of real estate in the history of Wisconsin. The battle was ultimately decided in favor of wildlife conservation. Today, the Horicon Marsh is a national treasure and a destination for hundreds of thousands of visitors.

The U.S. Fish and Wildlife Service

Horicon and Fox River National Wildlife Refuges are administered by the U.S. Fish and Wildlife Service (USFWS or Service). The USFWS is the primary federal agency responsible for conserving, protecting, and enhancing the nation's fish and wildlife populations and their habitats. It oversees the enforcement of federal wildlife laws, management and protection of migratory bird populations, restoration of nationally significant fisheries, administration of the Endangered Species Act, and the restoration of wildlife habitat such as wetlands. The Service also manages the National Wildlife Refuge System.

Fox squirrel. USFWS

The National Wildlife Refuge System

Refuge lands are part of the National Wildlife Refuge System, which was founded in 1903 when President Theodore Roosevelt designated Pelican Island in Florida as a sanctuary for Brown Pelicans. Today, the system is a network of about 545 refuges and wetland management districts covering about 95 million acres of public lands and waters. Most of these lands (82 percent) are in Alaska, with approximately 16 million acres located in the lower 48 states and several island territories.

The National Wildlife Refuge System is the world's largest collection of lands specifically managed for fish and wildlife. Overall, it provides habitat for more than 5,000 species of birds, mammals, fish, amphibians, reptiles, and insects. As a result of international treaties for migratory bird conservation and other legislation, such as the Migratory Bird Conservation Act of 1929, many refuges have

been established to protect migratory waterfowl and their migratory flyways. Horicon Refuge serves a dual purpose both as a critical nesting ground and as an important link in the Mississippi Flyway network of refuges that serve as rest stops and feeding stations for migrating ducks and geese.

Refuges also play a crucial role in preserving endangered and threatened species. Among the most notable is Aransas National Wildlife Refuge in Texas, which provides winter habitat for the highly endangered whooping crane. Likewise, the Florida Panther Refuge protects one of the nation's most endangered predators. Refuges also provide unique recreational and educational opportunities for people. When human activities are compatible with wildlife and habitat conservation, they are places where people can enjoy wildlife-dependent recreation such as hunting, fishing, wildlife observation, photography, environmental education, and environmental interpretation. Many refuges have visitor centers, wildlife trails, automobile tours, and environmental education programs. Nationwide, approximately 30 million people visited national wildlife refuges in 2004.

The National Wildlife Refuge System Improvement Act of 1997 established several important mandates aimed at making the management of national wildlife refuges more cohesive. The preparation of Comprehensive Conservation Plans (CCPs) is one of those mandates. The legislation directs the Secretary of the Interior to ensure that the mission of the National Wildlife Refuge System and purposes of the individual refuges are carried out. It also requires the Secretary to maintain the biological integrity, diversity, and environmental health of the National Wildlife Refuge System and identify the archeological and cultural values of Refuge System lands.

The goals of the National Wildlife Refuge System are to:

- Fulfill our statutory duty to achieve refuge purpose(s) and further the System mission.
- Conserve, restore where appropriate, and enhance all species of fish, wildlife, and plants that are endangered or threatened with becoming endangered.
- Perpetuate migratory bird, inter-jurisdictional fish, and marine mammal populations.
- Conserve a diversity of fish, wildlife, and plants.
- Conserve and restore, where appropriate, representative ecosystems of the United States, including ecological processes characteristic of those ecosystems.
- Foster understanding and instill appreciation of fish, wildlife, and plants, and their conservation, by providing the public with safe, high-quality, and compatible wildlife-dependent public use. Such use includes hunting, fishing, wildlife observation and photography, and environmental education and interpretation.

The Great Lakes Basin Ecosystem

Horicon National Wildlife Refuge lies within the Great Lakes Basin Ecosystem, a system shared between eight states and Canada. This ecosystem is made up of the world's largest freshwater body, which holds 18 percent of the world's supply of freshwater, covers 95,000 square miles, has 9,000 miles of shoreline, includes more than 5,000 tributaries, and has a drainage basin of 288,000 square miles.

The Basin contains critical breeding, feeding, and resting areas as well as migration corridors for waterfowl, colonial nesting birds, and many other species of migratory birds. At the same time, the Great Lakes Basin Ecosystem faces a variety of biological concerns, including the impact of exotic species, the precarious nature of the aquatic community structure, and high levels of contaminants. Certain species within the Great Lakes basin have drawn special concern. Fish species of special interest include lake trout, lake sturgeon, lake whitefish, walleye, Pacific salmon, and landlocked Atlantic salmon and their forage. Native mussels are a management concern because they are being seriously

Lesser Yellowlegs. USFWS

affected by zebra mussels and are in danger of extirpation from the Great Lakes Basin. Thirty-one species of migratory birds that the Service considers of management concern are found in the Great Lakes ecosystem.

A recent survey of biological diversity in the Basin identified 130 globally rare or endangered plant and animal species. The Bald Eagle, Peregrine Falcon, Kirtland's Warbler, Piping Plover, Mitchell's satyr and Karner blue butterflies, Indiana bat, gray wolf, lake sturgeon, deepwater sculpin, and pugnose shiner are some of the threatened, endangered, and candidate species that inhabit the Great Lakes ecosystem.

Horicon Marsh

Horicon Marsh is the largest freshwater cattail marsh in the United States, consisting of some 32,000 acres. The marsh is 14 miles long and 3 to 5 miles wide and has been classified as a palustrine system dominated by persistent emergent vegetation and floating vascular aquatic beds. The southern one-third of the marsh is managed by the Wisconsin Department of Natural Resources (Wisconsin DNR) while the northern two-thirds of the marsh is managed by the U.S. Fish and Wildlife Service.

In 1991 the marsh was designated a "Wetland of International Importance" by the Ramsar Convention, an intergovernmental treaty that obligates 45 signatory nations to consider wetland conservation in land-use planning, wise use of wetlands, establish wetland reserves, and encourage wetland research and data exchange. Designated sites in the United States include Okefenokee National Wildlife Refuge, Georgia/Florida; Everglades National Park, Florida; and Chesapeake Bay Estuarine Complex, Maryland/Virginia, to name a few.

In 1997, Horicon Marsh was accepted as a Globally Important Bird Area in American Bird Conservancy's United States Important Bird Areas program. The marsh received this recognition especially because more than 50 percent of the Mississippi Flyway Canada Geese migrate through the marsh during the fall and 2 percent of the flyway population of Mallards migrates through during the fall, with impressive numbers of other waterfowl. In the fall of 2004, the Horicon Marsh was recognized by the State as an Important Bird Area.

Horicon National Wildlife Refuge

Horicon NWR is located 6 miles east of Waupan in southeastern Wisconsin (Figure 1). Current Refuge ownership consists of over 15,500 acres of marsh and 5,600 acres of associated upland habitat. Marsh habitat is seasonally to permanently flooded and dominated by cattail, river bulrush, common reed grass, sedges, and reed canary grass. Uplands include nearly 2,000 acres of woodlands and 3,600 acres of grasslands.

Resource management at the Refuge involves using a variety of techniques to preserve and enhance habitats for wildlife, with programs both in marsh and upland management. Marsh management involves the manipulation of water levels to achieve a desired succession of wetland plant communities to meet the seasonal needs of wildlife populations. Upland management includes establishing and maintaining grasslands to provide nesting habitat for ducks, Sandhill Cranes, and various song birds. Management objectives include waterfowl production and migratory bird use, with Redhead ducks being emphasized.

Fox River National Wildlife Refuge

The Fox River NWR, established in 1979, consists of 1,004 acres of land located 10 miles north of Portage, Wisconsin along State Highway F (Figure 2). The Refuge is administered by staff at Horicon National Wildlife Refuge, approximately 40 miles to the east.

The majority of the Refuge is shallow marsh, sedge meadow, fen, or wet prairie wetlands. Upland prairie and forest is also present on the Refuge. The matrix of wetland and upland habitat provides excellent habitat for both wetland and upland associated wildlife, such as ducks, Sandhill Cranes, herons, rails, songbirds, deer, turkey, and Bobwhite Quail. Approximately 50 cranes use the Refuge during the summer and more than 300 use it as a staging area during fall migration .

Current management on the Refuge is focused on restoring historic upland habitats including oak savanna and open grasslands. The natural hydrology of the area is also being restored primarily through the filling of agricultural drainage ditches.

Figure 1: Location of Horicon NWR, Dodge and Fond Du Lac Counties, Wisconsin

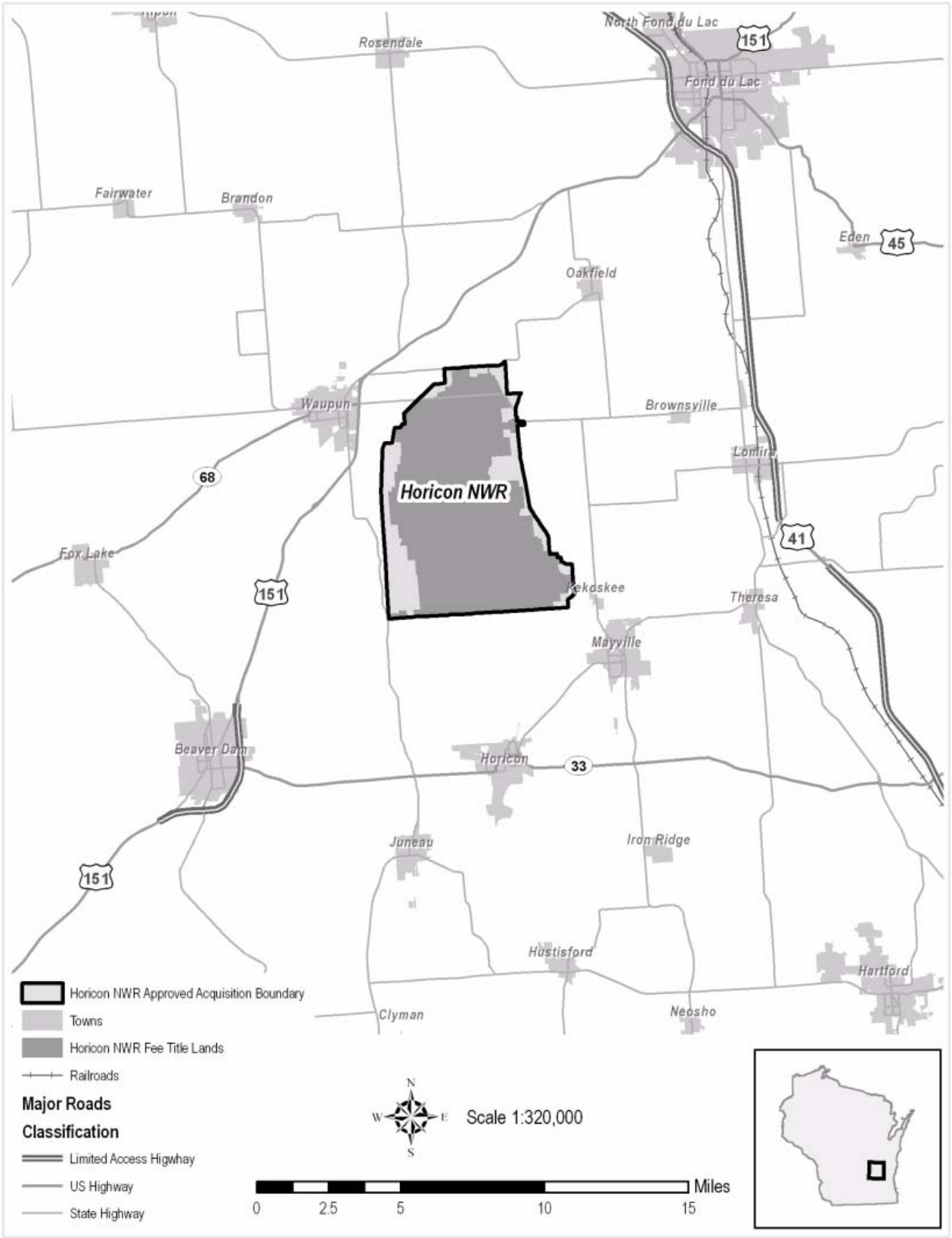
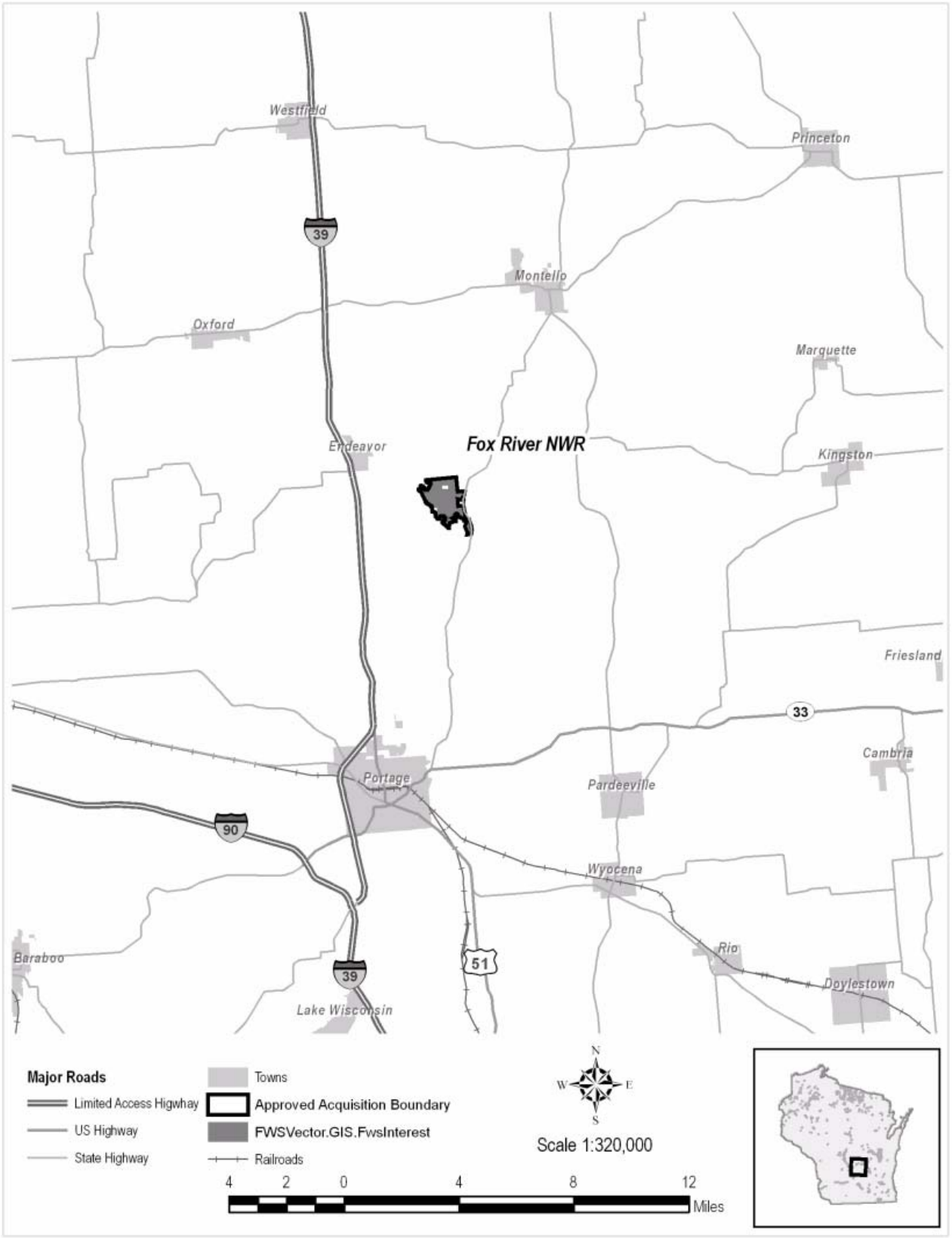


Figure 2: Location of Fox River NWR, Marquette County, Wisconsin



Visitor facilities and opportunities are minimal but include two parking areas, signs, and an annual deer hunt.

Fox River National Wildlife Refuge is located across the highway from a County Park named after John Muir, a famous conservationist in the 19th and early 20th centuries, who lived near the County Park and the Refuge during part of his boyhood years.

Refuge Purposes

Horicon National Wildlife Refuge was established in 1941 under the authority of the Federal Migratory Bird Conservation Act of 1929. The purpose of the Refuge is: "for use as an inviolate sanctuary, or for any other management purpose, for migratory birds..."

Fox River was established in 1977 under two legislative authorities:

> "…for the development, advancement, management, conservation, and protection of fish and wildlife resources…" Fish and Wildlife Act of 1956

> "…for use as an inviolate sanctuary, or for any other management purpose, for migratory birds." Migratory Bird Conservation Act, February 18, 1929, 16 U.S.C. 715d

Refuge Visions

The planning team considered the past vision statements and emerging issues and drafted the following vision statements as the desired future state of each Refuge:

Horicon National Wildlife Refuge

> Horicon NWR will be beautiful, healthy, and support abundant and diverse native fish, wildlife, and plants for the enjoyment and thoughtful use of current and future generations. The Refuge's hydrologic regime will include a functional Rock River riparian system, with clean water flowing into and out of the Refuge. The Refuge will be a place where people treasure an incredible resource that upholds the distinction of a Wetland of International Importance.

Fox River National Wildlife Refuge

> Fox River NWR will consist of diverse, productive habitats and wildlife that provides conditions found historically (pre-European settlement) in the Upper Fox River watershed. Specifically, the Refuge consists of a mosaic of oak savanna, dry and wet prairie, fens, sedge meadow, and shallow marsh habitats managed to perpetuate a variety of native plant and wildlife species, namely those of priority to the Service.
>
> Refuge staff, located at Horicon NWR, are a multi-disciplined team dedicated to providing quality habitat and wildlife management, as well as quality wildlife-dependent public use opportunities compatible with Refuge purposes. Local communities and visitors value the Refuge for the personal, financial, and societal benefits it provides. A strong conservation ethic is promoted in the surrounding communities where both John Muir and Aldo Leopold were inspired by nature's beauty, complexity, and value.

Purpose and Need for Plan

This CCP articulates the management direction for Horicon and Fox River National Wildlife Refuges for the next 15 years. Through the development of goals, objectives, and strategies, this CCP describes how the refuges also contribute to the overall mission of the National Wildlife Refuge System. Several legislative mandates within the National Wildlife Refuge System Improvement Act of 1997 have guided the development of this plan. These mandates include:

- Wildlife has first priority in the management of refuges.
- Wildlife-dependent recreation activities, namely hunting, fishing, wildlife observation, wildlife photography, environmental education and interpretation are priority public uses of refuges. We will facilitate these activities when they do not interfere with our ability to fulfill the refuges' purpose or the mission of the Refuge System.
- Other uses of the Refuge will only be allowed when determined appropriate and compatible with Refuge purposes and mission of the Refuge System.

School visit to Horicon NWR.

The plan will guide the management of Horicon NWR and Fox River NWR by:

- Providing a clear statement of direction for the future management of each Refuge.
- Making a strong connection between Refuge activities and conservation activities that occur in the surrounding area.
- Providing Refuge neighbors, users, and the general public with an understanding of the Service's land acquisition and management actions on and around the Refuge.
- Ensuring the Refuge actions and programs are consistent with the mandates of the National Wildlife Refuge System.
- Ensuring that Refuge management considers federal, state, and county plans.
- Ensuring that Refuge management considers the preservation of historic properties.
- Establishing long-term continuity in Refuge management.
- Providing a basis for the development of budget requests on the Refuge's operational, maintenance, and capital improvement needs.

History and Establishment

Horicon National Wildlife Refuge

Nearly twelve thousand years ago, glaciers created the shallow peat-filled marshland basin known today as the Horicon Marsh (Figure 3). Since that time, nomadic hunters and gatherers succeeded by numerous Indian cultures, including the Paleo hunters, the Hopewellian People, and the Woodland Indians have lived near this marsh. In fact, archaeological records confirm nearly every prehistoric Indian culture known to the Upper Midwest lived near Horicon Marsh at one time or another.

When early European settlers came to this land they settled among the Indian villages and established their first modern settlement – the town of Horicon. In 1846, a dam was built on the Rock River to power a sawmill and to develop steamboat navigation. The dam created Lake Horicon, which at the time was considered to be the largest human-engineered lake in the world. At this time water levels in the marsh were raised by 9 feet, but after 23 years of disputes, the dam was removed and the marsh was returned to a haven for wildlife.

The era that followed was one of hunting clubs and market hunting days, which lasted to the early 1900s. At this time, other interests appeared to influence and dominate the marsh, most notably, moist-soil agriculture. Root crop cultivation soon became the incentive to drain the lands around the marsh, and within a short time, the entire marsh. Despite these efforts, attempts to farm the peat soil failed and left behind natural resource devastation that could have hardly been foreseen.

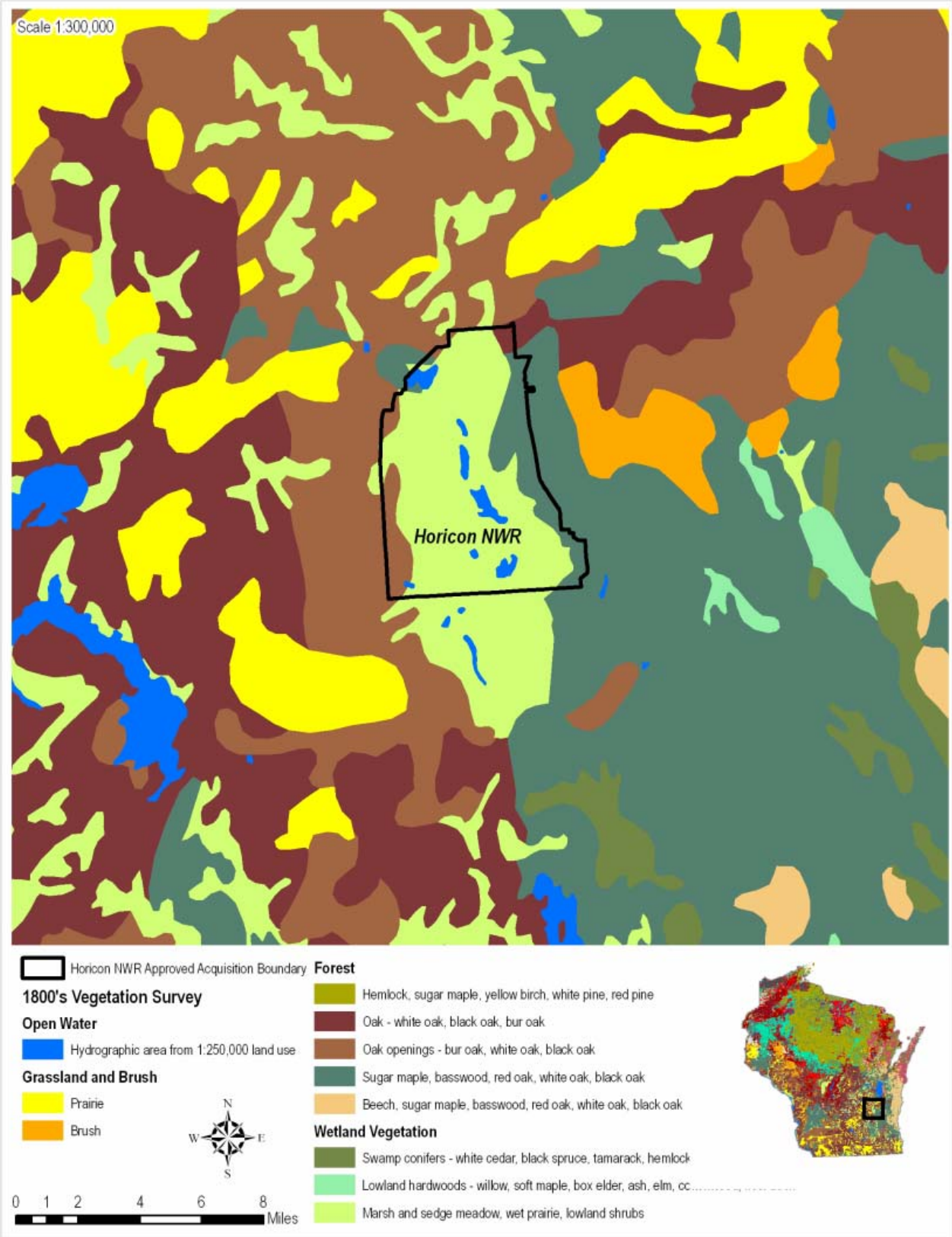
In 1921, several conservation-minded individuals began a fight to restore the marsh, and 6 years later the state legislature passed the Horicon Marsh Wildlife Refuge Bill. This action provided for the construction of a dam to restore marshland water levels and permit the acquisition of lands in and around the marsh which led to the establishment of Horicon National Wildlife Refuge in 1941.

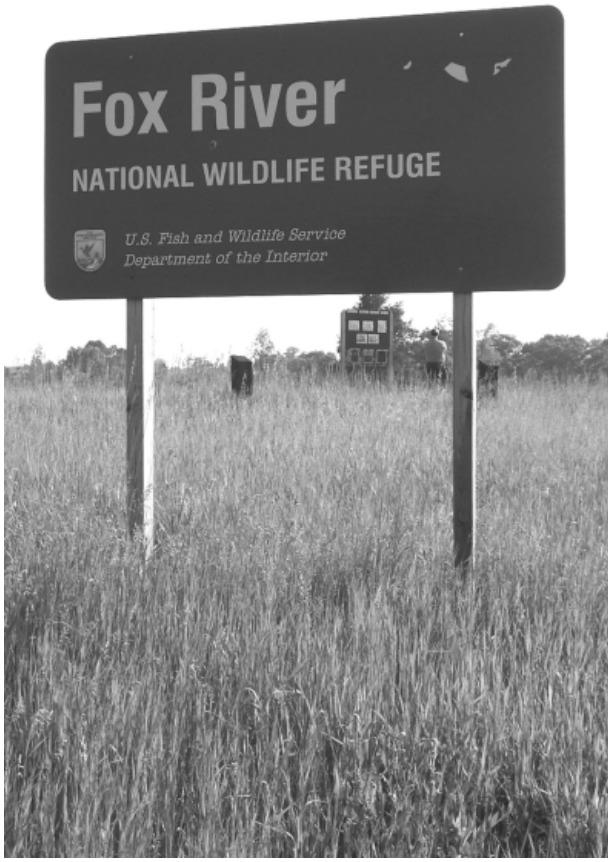
Fox River National Wildlife Refuge

Fox River National Wildlife Refuge was authorized by the USFWS Director in 1978 under the Service's Unique Wildlife Ecosystem Program for the purposes of protecting an area known as the Fox River Sandhill Crane Marsh from further drainage for agricultural purposes. The marsh was known as an important breeding and staging area for the Sandhill Crane. The following paragraphs recount the events leading up to establishment of the Refuge.

During the summer of 1978, Federal authorities documented activities on a marsh adjacent to County Road F that appeared to be in violation of Section 404 of the Federal Water Pollution Control Act. A court case (Civil No. 78-c-367) subsequently followed and determined that a substantial portion

Figure 3: Historic Vegetation of the Horicon Marsh (1850s)





Entrance sign at Fox River NWR. USFWS

of the ditching and filling activities within the marsh boundaries were within the limits of Section 404 jurisdiction. The U.S. Attorney agreed to prosecute the case. A preliminary injunction was filed on July 28, 1978, in U.S. District Court, Eastern District of Wisconsin, that restrained the landowner from further ditching and filling activities.

Subsequently, the court issued a Consent Decree whereby the Service agreed to purchase the subject 631-acre property after a specified amount of restoration. The Fox River National Wildlife Refuge was formally established during the spring of 1979 when the Service acquired the property to fulfill the Consent Decree.

Planning documents completed at the time of Refuge establishment recommended a Refuge boundary encompassing 1,043 acres, the minimum size needed to meet Service goals and objectives.

Legal Context

In addition to the executive order establishing the Refuge, and the National Wildlife Refuge System Improvement Act of 1997, several federal laws, executive orders, and regulations govern administration of Horicon NWR and Fox River NWR. Appendix E contains a partial list of the legal mandates that guided the preparation of this plan and those that pertain to Refuge management.